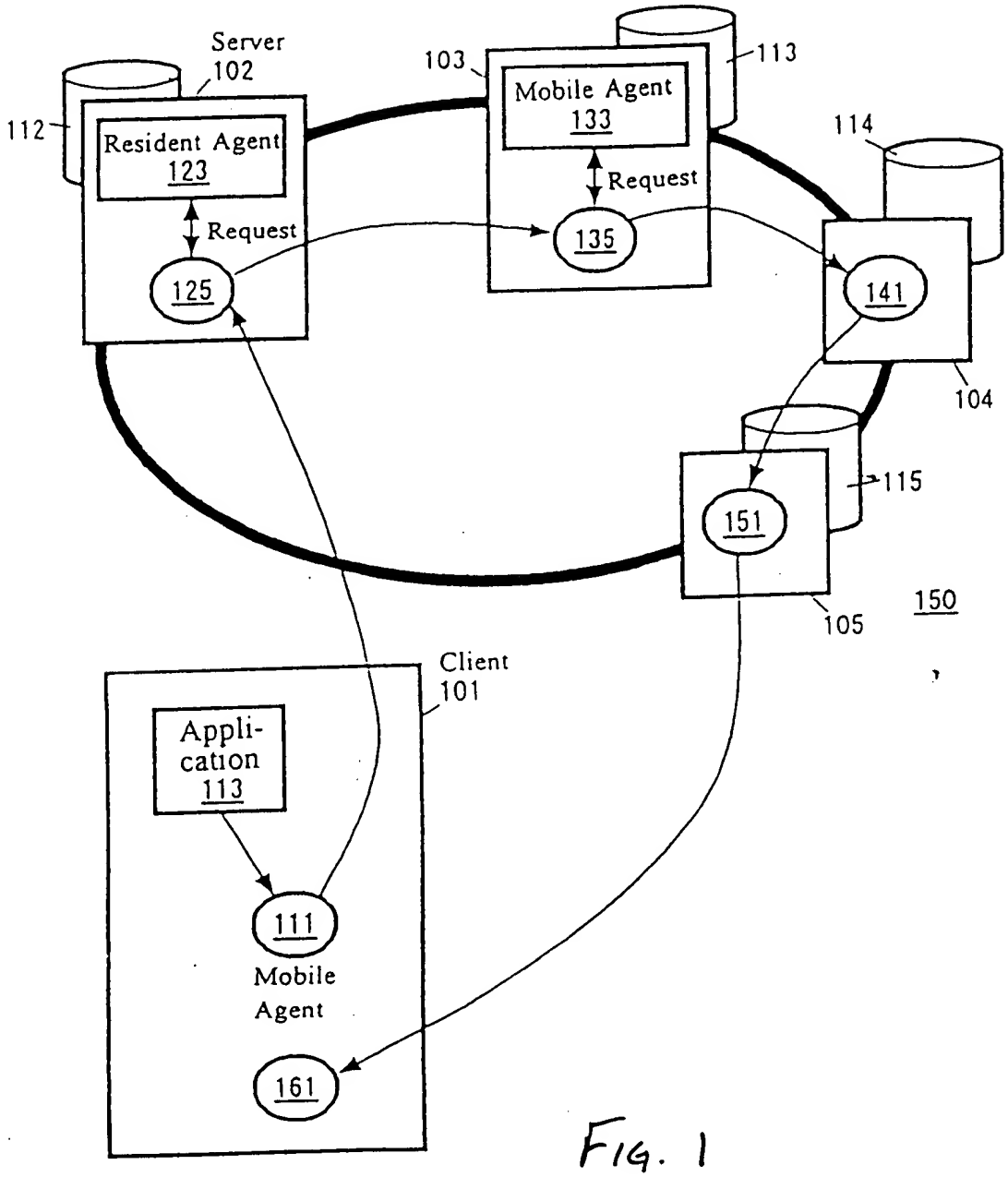

Server
102
112
Resident Agent
123
Request
125
103
Mobile Agent
133
Request
135
113
114
141
104
115
151
105
150
Client
101
Appli-
cation
113
111
Mobile
Agent
161

FIG. 1

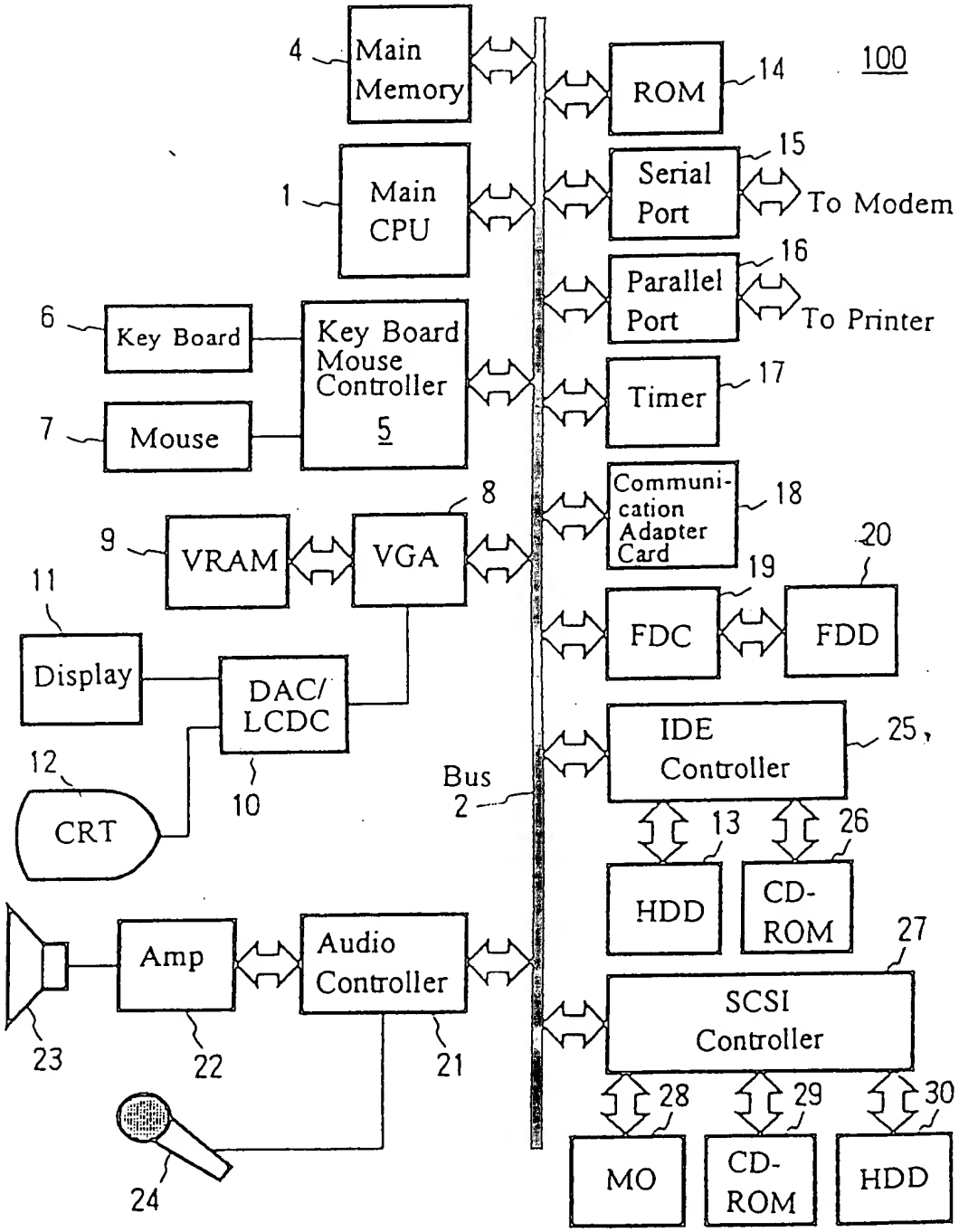

4
Main Memory
ROM
14
100
1
Main CPU
15
Serial Port
To Modem
16
Parallel Port
To Printer
6
Key Board
Key Board Mouse Controller
5
7
Mouse
Timer
17
8
Communi-cation Adapter Card
18
9
VRAM
VGA
20
19
11
FDC
FDD
Display
DAC/ LCDC
25
IDE Controller
12
Bus
2
10
CRT
13
26
HDD
CD-ROM
27
Amp
Audio Controller
SCSI Controller
23
22
21
28
29
30
MO
CD-ROM
HDD
24

Fig. 2

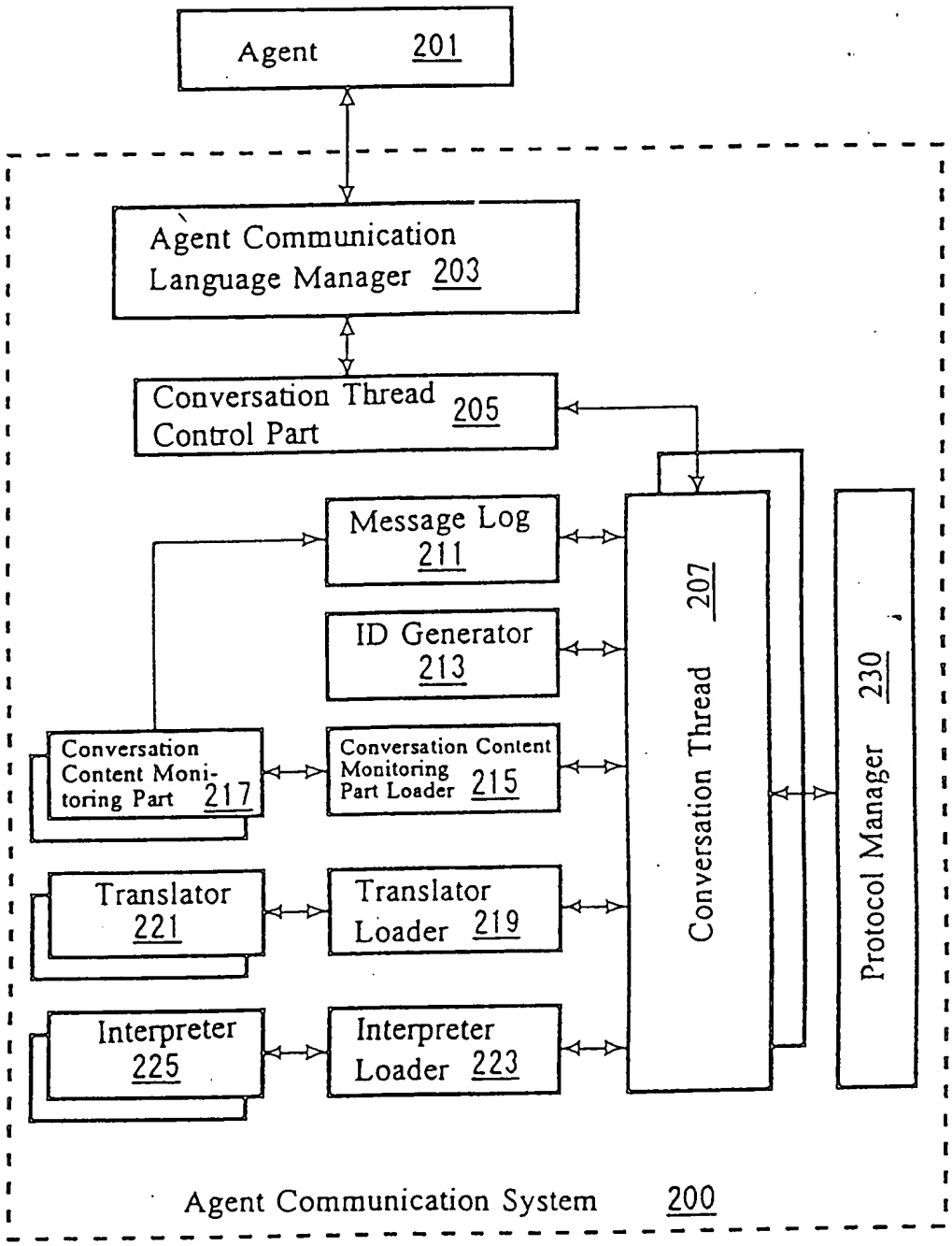

Agent 201
Agent Communication Language Manager 203
Conversation Thread Control Part 205
Message Log 211
ID Generator 213
Conversation Content Monitoring Part 217
Conversation Content Monitoring Part Loader 215
Translator 221
Translator Loader 219
Interpreter 225
Interpreter Loader 223
Conversation Thread 207
Protocol Manager 230
Agent Communication System 200

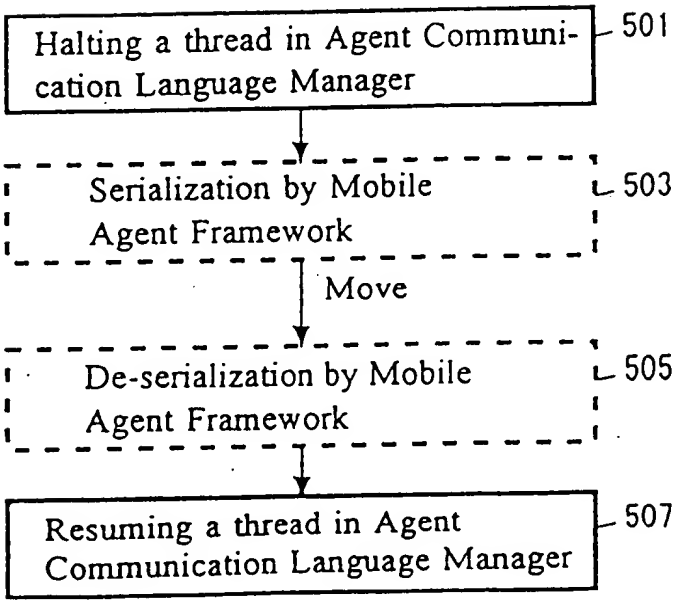
FIG. 3

Fig. 4

Message Packet 300

Message Type	301
Sender	303
Receiver	305
Response ID	307
Conversation ID	309
Describing Language Type	311
Ontology	313
Content	315

Fig. 14



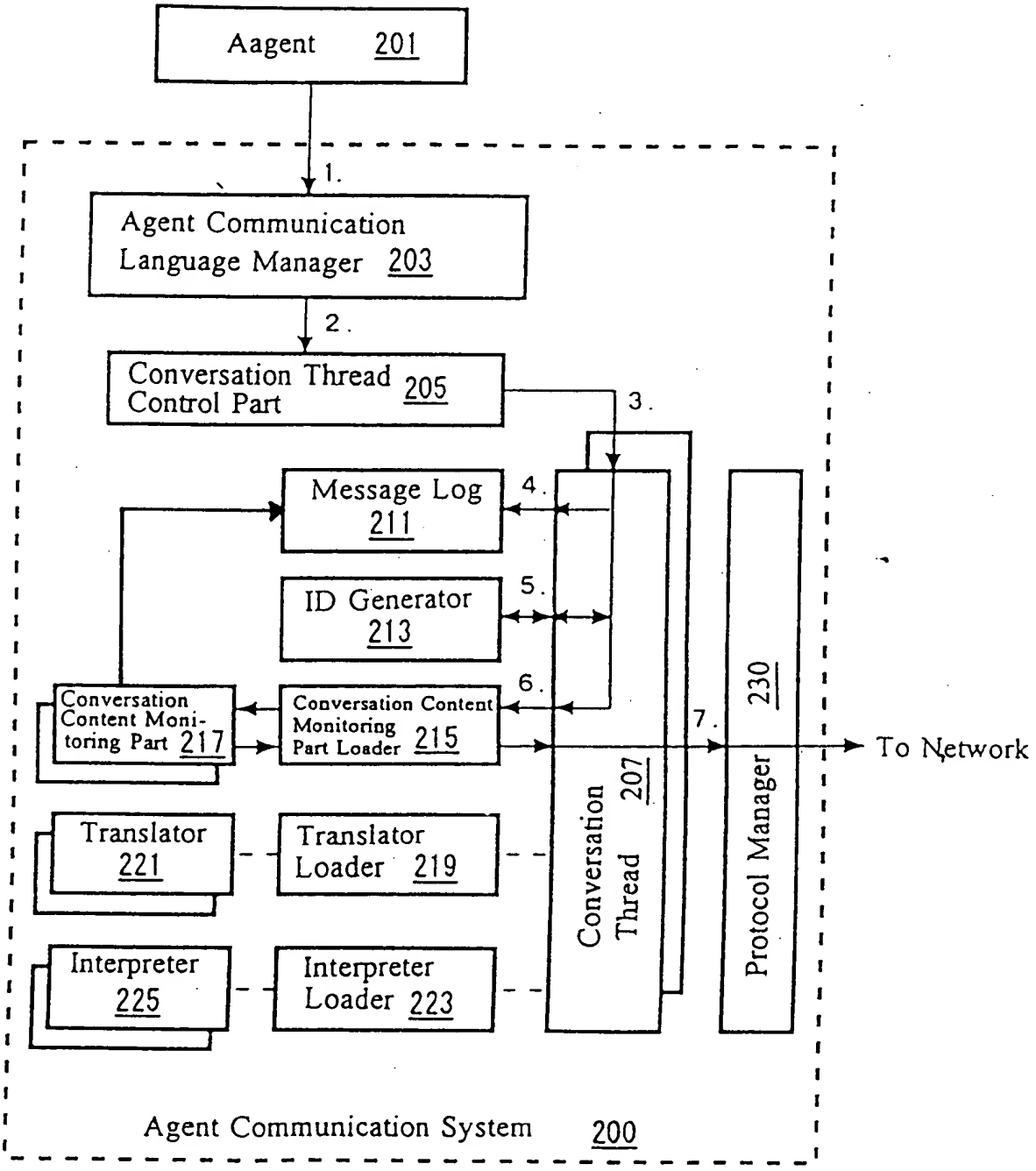
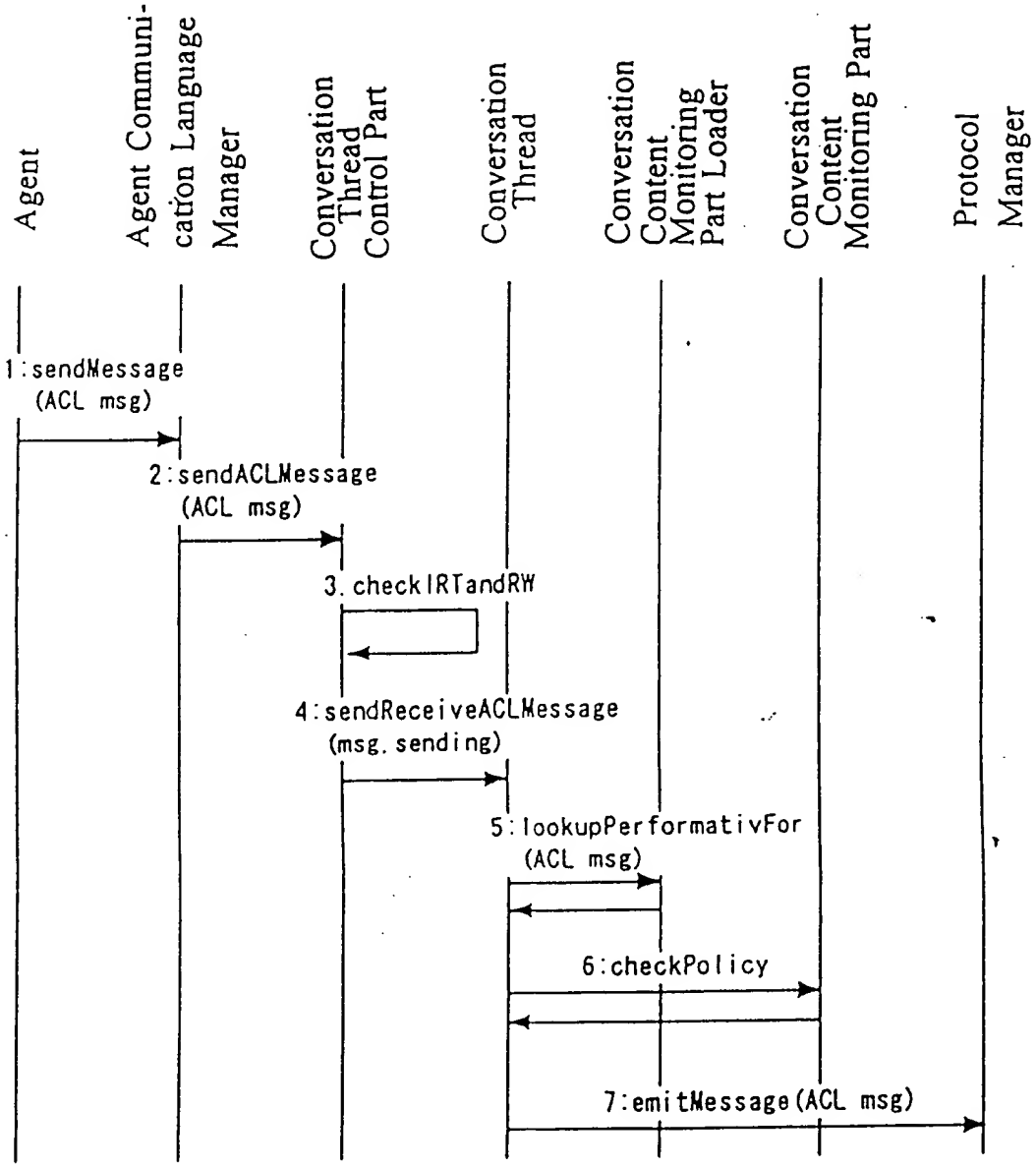

Aagent 201
1.
Agent Communication Language Manager 203
2.
Conversation Thread Control Part 205
3.
Message Log 211
4.
ID Generator 213
5.
Conversation Content Monitoring Part 217
Conversation Content Monitoring Part Loader 215
6.
7.
To Network
Translator 221
Translator Loader 219
Interpreter 225
Interpreter Loader 223
Conversation Thread 207
Protocol Manager 230
Agent Communication System 200

Fig. 5

FIG. 6



r: Receiver
s: Sender
F: Facilitator
A: Agent
o: Ontology

l: Describing Language Type
c: Contents
rw: Conversation ID
irt: Response ID

330

Message Type	Conversation Content Monitoring Part
ask-if	ask-if Monitoring Part
sorry	sorry Monitoring Part
⋮	⋮
recruit-all	recruit-all Monitoring Part

Fig. 7

350

Interpreter	Agent Communication Language	Describing Language	Ontology
interprter A	KQML	Prolog	Stock
interprter B	FIPA	SL	Stock
⋮	⋮	⋮	⋮
interprter X	KQML	KIF	Yellow Page

Fig. 10

340

Agent Communication Language	Translator
KQML	KQML→FIPA
⋮	⋮
FIPA	FIPA→KIF

Fig. 11

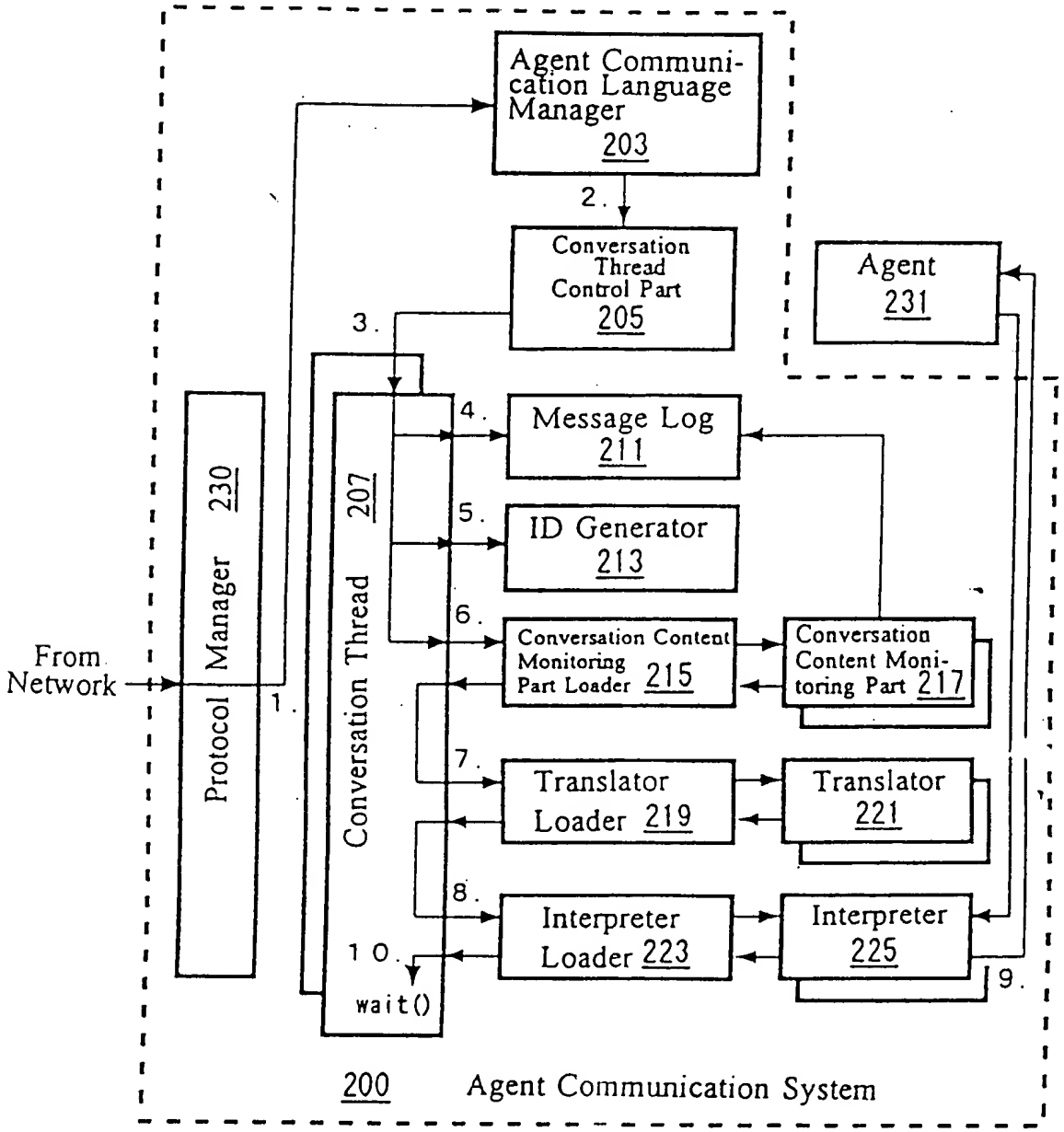
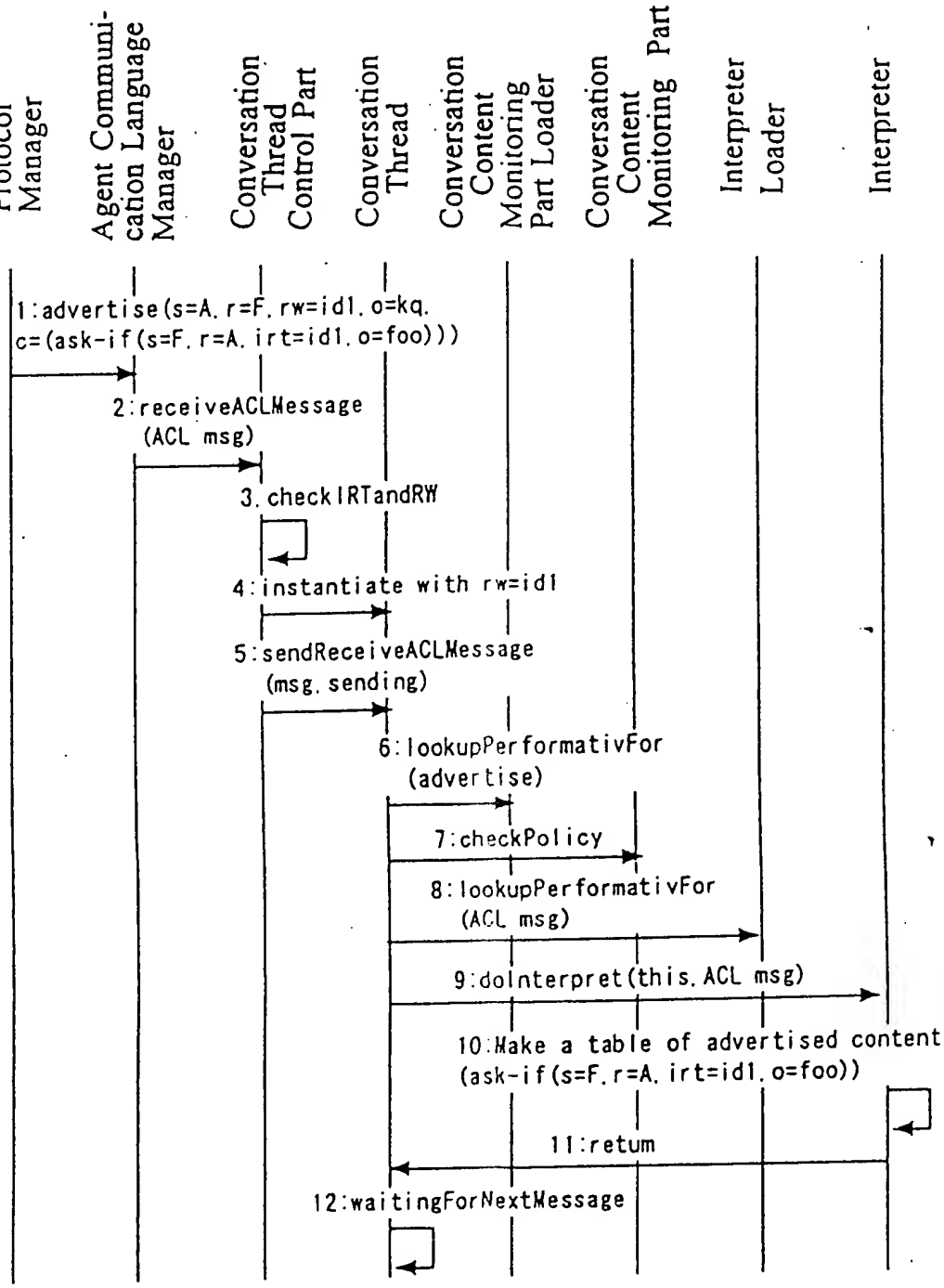

Agent Communi-cation Language Manager 203
2.
Conversation Thread Control Part 205
Agent 231
3.
4.
Message Log 211
5.
ID Generator 213
6.
Conversation Content Monitoring Part Loader 215
Conversation Content Moni-toring Part 217
From Network
Protocol Manager 230
1.
Conversation Thread 207
7.
Translator Loader 219
Translator 221
8.
Interpreter Loader 223
Interpreter 225
9.
10.
wait()
200 Agent Communication System

FIG. 8

Fig. 9



r: Receiver
s: Sender
F: Facilitator
A: Agent
o: Ontology

l: Describing Language Type
c: Contents
rw: Conversation ID
irt: Response ID

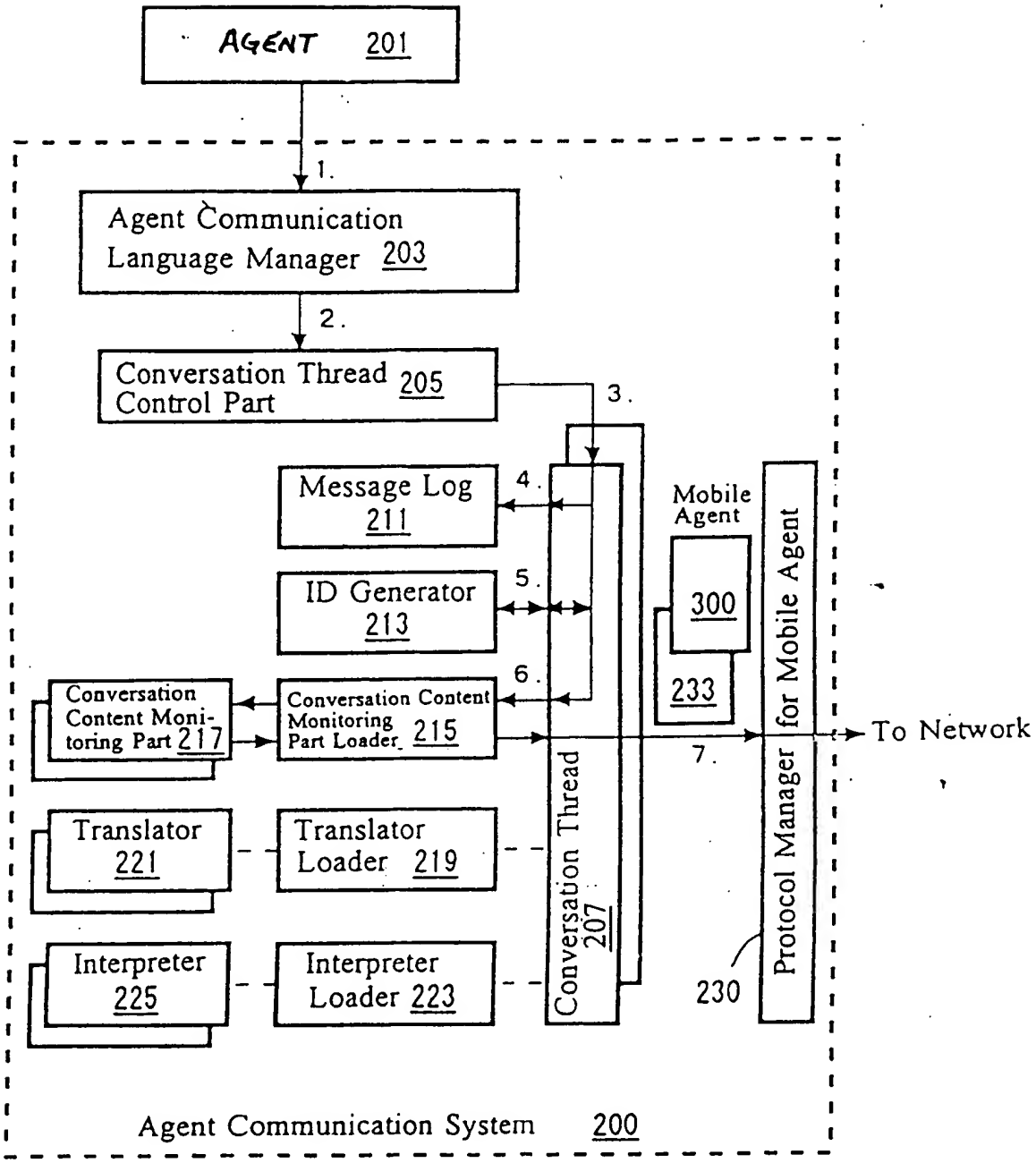

AGENT 201
1.
Agent Communication Language Manager 203
2.
Conversation Thread Control Part 205
3.
Message Log 211
4.
ID Generator 213
5.
Conversation Content Monitoring Part Loader 215
6.
Conversation Content Moni-toring Part 217
Translator 221
Translator Loader 219
Interpreter 225
Interpreter Loader 223
Conversation Thread 207
Mobile Agent
300
233
7.
Protocol Manager for Mobile Agent
230
To Network
Agent Communication System 200

FIG. 12

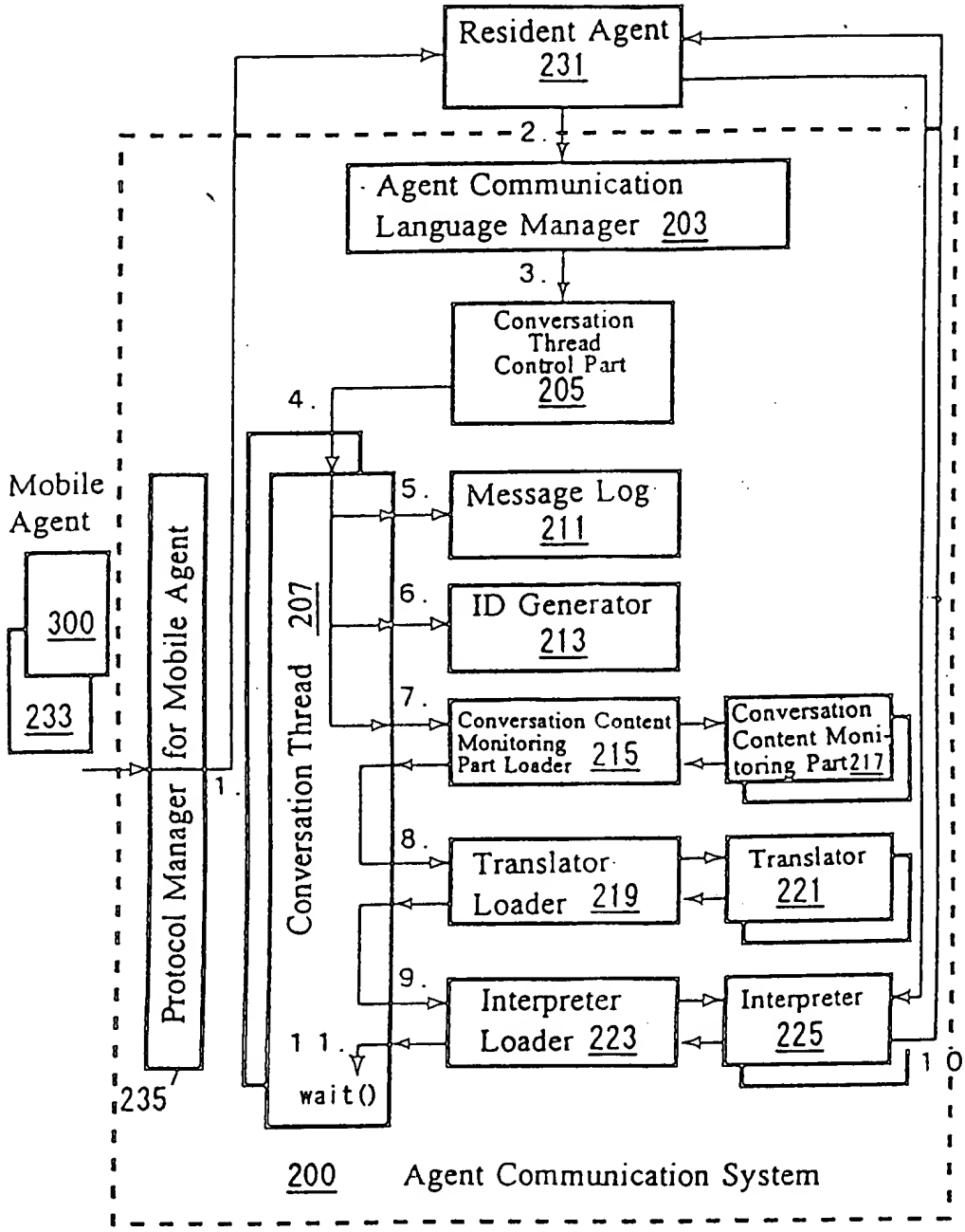
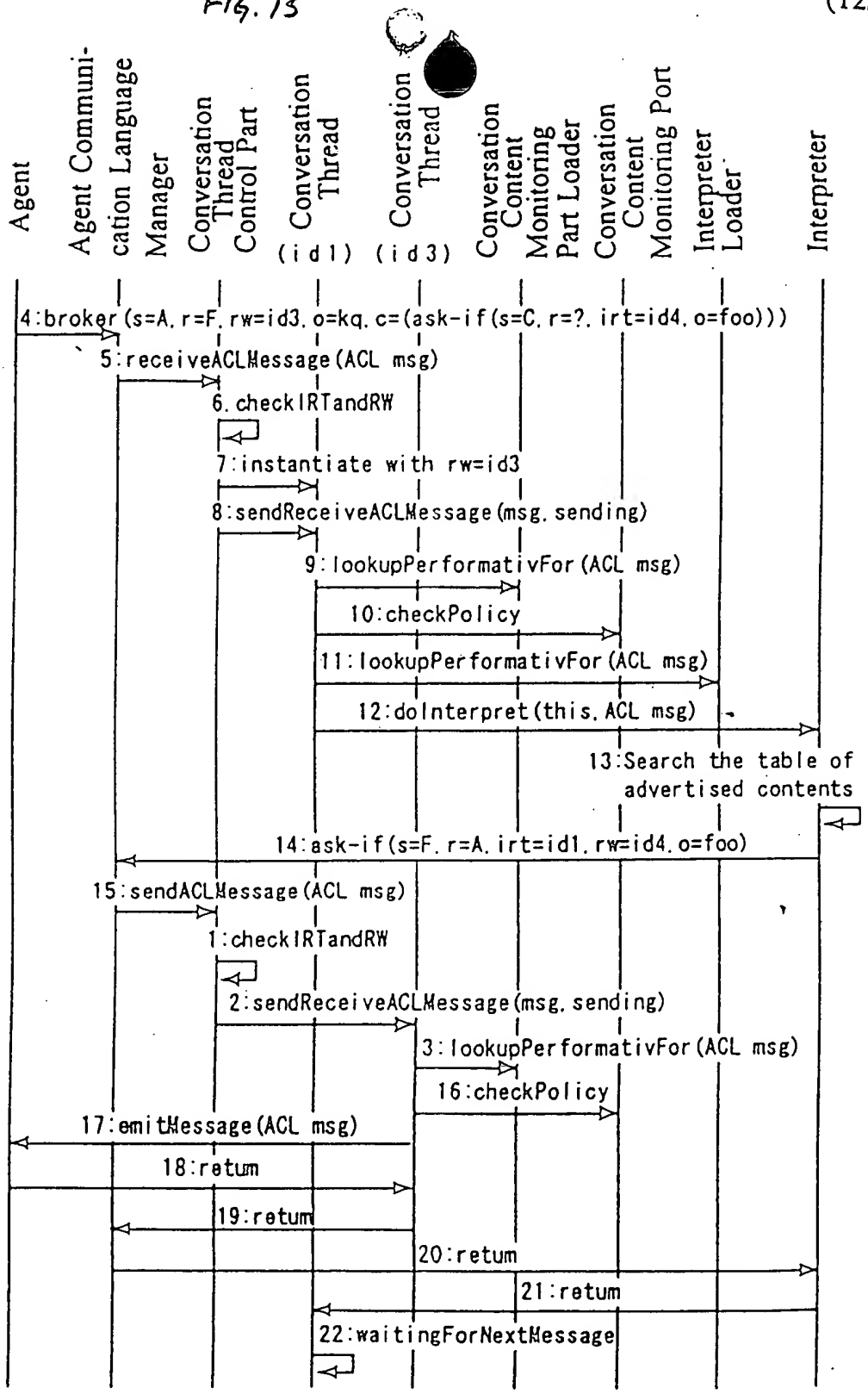

Resident Agent
231
2.
Agent Communication
Language Manager 203
3.
Conversation
Thread
Control Part
205
4.
Mobile
Agent
300
233
Protocol Manager for Mobile Agent
1.
Conversation Thread 207
5.
Message Log
211
6.
ID Generator
213
7.
Conversation Content
Monitoring
Part Loader 215
Conversation
Content Moni-
toring Part217
8.
Translator
Loader 219
Translator
221
9.
Interpreter
Loader 223
Interpreter
225
10.
11.
wait()
235
200 Agent Communication System

Fig. 13

Fig. 15



r: Receiver
s: Sender
F: Facilitator
A: Agent
o: Ontology

l: Describing Language Type
c: Contents
rw: Conversation ID
irt: Response ID